

**§ 162.018-4 Construction and workmanship.**

(a) Safety relief valves shall be of either the internal or external spring-loaded type, suitable for the intended service.

(b) Safety relief valve body, base, bonnet and internals shall be designed for a pressure of not less than the set-pressure of the valve.

(c) All safety relief valves shall be so constructed that the failure of any part cannot obstruct the free and full discharge of vapors from the valve.

(d) The nominal size of a safety relief valve shall be the inside diameter of the inlet opening to the individual valve disk. No safety relief valve shall be smaller than  $\frac{3}{4}$  inch nor larger than 6 inches. Safety relief valves shall have flanged or welded end inlet connections and either flanged or screwed outlet connections, except outlets exceeding 4 inches in diameter shall be flanged.

(e) Safety relief valves shall be of the angle or straight-through type, fitted with side or top outlet discharge connections.

(f)(1) Springs shall not show a permanent set exceeding 1 percent of their free length 10 minutes after being released from a cold compression test closing the spring solid.

(2) Springs may not be re-set for any pressure more than 10 percent above or 10 percent below that for which the valve is marked.

(3) If the operating conditions of a valve are changed so as to require a new spring under paragraph (f)(2) of this section for a different pressure, the valve shall be adjusted by the manufacturer or his authorized representative.

(g) The design and construction of safety relief valves shall permit easy access for inspection and repair.

(h) Safety relief valves shall be tapped for not less than  $\frac{1}{4}$  inch pipe size drain at the lowest practicable point where liquid can collect.

[CGFR 52-43, 17 FR 9540, Oct. 18, 1952]

**§ 162.018-5 Blow-down adjustment and popping tolerance.**

(a) Safety relief valves shall be so constructed that no shocks detrimental to the valve or pressure vessel are produced when lifting or closing.

Safety relief valves shall be designed to open sharply and reach full lift and capacity at the maximum accumulation. Valve closure after popping shall be clean and sharp. Safety relief valves shall operate satisfactorily without wiredrawing and chattering at any stage of operation.

(b) Safety relief valves having adjustable blow-down construction shall be adjusted to close after blowing down not more than 5 percent of the set pressure. Valves shall be adjusted to pop within a tolerance of plus or minus 3 percent of the set pressure, except that for pressures of 70 p.s.i. and below, the tolerance in popping pressure shall not vary more than plus or minus 2 p.s.i.

[CGFR 52-43, 17 FR 9541, Oct. 18, 1952]

**§ 162.018-6 Marking.**

(a) Each safety relief valve shall be plainly marked by the manufacturer with the required data in such a way that the marking will not be obliterated in service. The marking may be stamped on the valve or stamped or cast on a plate securely fastened to the valve. The marking shall include the following data:

(1) The name or identifying trade-mark of the manufacturer.

(2) Manufacturer's design or type number.

(3) Size \_\_\_\_ inches. (The pipe size of the valve inlet).

(4) Set pressure \_\_\_\_ p.s.i.

(5) Rated capacity \_\_\_\_ cubic feet per minute of the gas or vapor (at 60 °F. and 14.7 p.s.i.a.).

(6) Coast Guard approval number. The minimum wording for showing approval shall be "USCG 162.018/\* \*" or "USCG 162.018-\* \*".

(b) [Reserved]

[CGFR 68-82, 33 FR 18908, Dec. 18, 1968, as amended by USCG 2001-10224, 66 FR 48620, Sept. 21, 2001]

**§ 162.018-7 Flow rating tests.**

(a) Flow rating of valves shall be conducted in accordance with UG-131 of section VIII of the ASME Code, S-

\* \*Number to be assigned by the Commanding Officer, USCG Marine Safety Center.